

23969-P001US

PATENT

Inventor: Application of:  
Brian Doege et al.

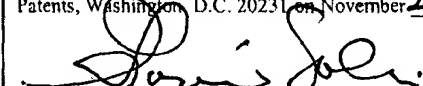
For: METHOD FOR BACTERIALLY  
TREATING SMALL-TANK TOILET  
SYSTEMS AND AN APPARATUS FOR  
USING SAME

Atty Dkt: 23969-P001US

Serial No: 09/723,549  
Filed: November 27, 2000  
Group Art Unit: 1724  
Examiner: Chester T. Barry  
703.306.5921

CERTIFICATE UNDER 37 C.F.R. 1.8

I hereby certify that this correspondence (along with any item referred as being enclosed herewith) is being deposited with the U.S. Postal Service as first class mail with sufficient postage in an enveloped addressed to Box AF, Assistant Commissioner of Patents, Washington, D.C. 20231 on November 26, 2002.

  
GRACIE SOLIS

**SECOND DECLARATION OF BRIAN DOEGE UNDER 37 C.F.R. §§ 1.131 AND 1.132**

Box AF  
Assistant Commissioner for Patents  
Washington, D. C. 20231

Dear Sir:

1. My name is Brian Doege. I am one of the inventors on the above-referenced patent application. I am also the President of Biological Systems, Inc. ("Bio-Sys"), the Applicant of this Application. The other inventors of the Application are Saul Krell, Mark Brodowicz, and Michael Cooney. I will refer to Messrs. Krell, Brodowicz, Cooney, and me collectively as the "Inventors."

2. On August 1, 2002, I executed a declaration under 37 C.F.R. § 1.131 (my "131 Declaration"). The following day I executed a declaration under 37 C.F.R. § 1.132 (my "132 Declaration"). Collectively, I will refer to them as my "August Declarations." I understand that my August Declarations were submitted to the United States Patent and Trademark Office in the Second Amendment Under 37 C.F.R. § 1.111 filed in the Application.

3. Attached to these declarations were excerpts from my Telephone Log. Specifically, these were Exhibits A-D attached to my 131 Declaration and Exhibit A to my 1.132 Declaration.

4. The pertinent portions of these Exhibits read as follows:

5. In Exhibit A to my 131 Declaration, the first paragraph states:

Spoke with Mark - he and Mike discussed problem Amtrak is having with their commuter toilets. They are using a pouch product - dissolving for toilets. Have odor problem and disposal. Can we fix?

6. "Mark" and "Mike" identified in this excerpt of Exhibit A are Inventors Brodowicz and Cooney, respectively.

7. This excerpt of Exhibit A reflects that AMTRAK had apprised us that a problem existed respecting AMTRAK's commuter toilet systems, a majority of which are recirculation tank toilet systems. Such problems included odor and disposal problems. We decided to investigate whether we could effect a solution different from what was AMTRAK's current standard operating procedures to solve this problem.

8. In Exhibit B to my 131 Declaration, the third, fourth and fifth paragraphs state:

Spoke to Mark re Amtrak problems, got details on Recirculation toilets in Chicago - They are smaller tanks - and use black water to flush.

Need: perfume to disguise odor  
dye to disguise poop

Current products is bactericide - can we use active bacteria? Odor problem is chief complaint of customer.

I need to talk Saul to determine if we can produce or modify our tank cleaner for daily maintenance.

9. "Mark" and "Saul" identified in this excerpt of Exhibit B are Inventors Brodowicz and Krell, respectively.

10. This excerpt confirms that we were indeed investigating a novel bacteria/surfactant treatment for recirculation tank toilet systems. As reflected in the excerpt, we were investigating whether an active bacteria could be utilized for daily maintenance to replace the current products that contained bactericides. This excerpt

further reflects our idea for producing or modifying our tank cleaner for this maintenance treatment, which tank cleaner contained both bacteria and a surfactant.

11. In Exhibit C to my 131 Declaration, the second paragraph states:

Talked to Saul discussed what we would need to do to modify BMTC-7 for the Amtrak daily maintenance problem – discussed buffering effect of surfactants on the ammonia and other malodors in the tank – He suggest boosting amount of microbial in formula. – Can we use MTC-2000 as carrier – should not be a problem. We will arrange test with Amtrak.

12. “Saul” identified in this excerpt of Exhibit C is Inventor Krell.

13. This excerpt confirms that we had conceived modifying our BMTC-7 product for the maintenance treatment. The BMTC-7 product contains Applicant’s BMET-1 microbes, which are microbes falling within the scope of the bacteria as claimed in the Application. The BMTC-7 product also includes surfactant used in a bacteria/surfactant weight ratio amount as claimed in the Application. We also discussed arranging for tests with AMTRAK so that we could experiment with our invention to determine whether it would work through normal operations conditions associated with a recirculation tank toilet system (*i.e.* over a period of time and repeated use of the recirculation tank toilet system).

14. In Exhibit D to my 131 Declaration, the third paragraph states:

Mark – Mike talked to Amtrak Beech Grove. They very pleased with products – he to arrange test for our MTC-2010 liquid with either Chicago or Washington - need to get with alteria [*sic*, Alteria] head of daily maintenance. – Told Mark we had “HC” level of microbes in new liquid see if they like results.

15. Exhibit A to my 132 Declaration is identical to Exhibit D to my 131 Declaration.

16. “Mark” and “Mike” identified in this excerpt of Exhibit D of my 131 Declaration and Exhibit A of my 132 Declaration are Inventors Brodowicz and Cooney, respectively.

17. This excerpt reflects that testing was taking place with AMTRAK. In reviewing my August Declarations, I have determined that I inadvertently referred to the

testing at AMTRAK's Beech Grove re-manufacturing and heavy maintenance facility to include testing in a recirculation tank toilet system, when, in fact, it did not. AMTRAK's Beech Grove facility does not have nor does it service any daily commuter cars that would have recirculating tank toilets. This testing reflected in Exhibit D at AMTRAK's Beech Grove facility occurred in the first quarter of 2000.

18. This excerpt further confirms Inventor Cooney was arranging testing of the MTC-2010 liquid in either Chicago and Washington. It was at these facilities that we subsequently tested the bacteria/surfactant treatment in a recirculation tank toilet system. (Such a system is also reflected in the excerpt from Exhibit B to my 131 Declaration). The MTC-2010 liquid contains Applicant's BMET-1 microbes, which are microbes falling within the scope of the bacteria as claimed in the Application. The MTC-2010 liquid also includes dyes and deodorant, as well as the surfactant used in a bacteria/surfactant weight ratio amount as claimed in the Application.

19. The testing of Applicant's invention at AMTRAK's facilities occurred in Washington D.C. around June and July 2000. Further evaluation of the Applicant's invention occurred in Metro North's facilities in August 2000. Attached hereto as Exhibit E is a memorandum respecting this evaluation of Applicant's invention at Metro North. Metro North's QC manager, Al Roman, drafted Exhibit E, to whom we had provided our invention to test and determine if it would work for its intended purpose. (Portions including the date have been redacted from Exhibit E.)

20. I understand the Examiner of the Application has stated that somehow my August Declarations reflected that AMTRAK and/or Metro North invented the present invention. That statement is simply incorrect. The other Inventors and I originally came up with the novel way to treat recirculation tank toilet systems. The testing at AMTRAK and Metro North was done solely under our supervision and with our protocols.

21. As reflected in my August Declarations, I and the other Inventors conceived of utilizing a bacteria in combination with a surfactant for use in a recirculation tank toilet system. Moreover, we conceived of combining the bacteria and surfactant in

the treatment in a bacteria/surfactant weight ratio amount as claimed in the Application. These ideas were the Inventors' original ideas and were not suggested in anyway by AMTRAK, Metro North, or any third party.

22. To the contrary, after we conceived the invention, we began experimenting to determine if they would indeed work for its intended purpose. With respect to such experimentation, beginning in 2000, we worked in confidence with AMTRAK personnel (as well as Metro North personnel) who were dubious that our bacteria/surfactant treatment would work in a recirculation tank toilet system.

23. The nature of the tests were such that it was necessary for us to utilize recirculation tank toilet systems over periods of time and under typically use conditions to determine whether the bacteria/surfactant treatment would work for its intended purpose. The testing was conducted under Applicant's supervision and control. In fact, the Inventors and other Applicant personnel monitored and inspected the invention throughout the period of testing.

24. The bacteria/surfactant treatment was only provided for use in testing in recirculation tank toilet systems that the Inventors and other Applicant personnel were supervising and in control.

25. During this testing, the bacteria/surfactant treatment was not sold or offered for sale in any manner to AMTRAK, Metro North, and/or third parties, and Applicant did not sell or offer for sale its invention until after the Application was filed. It would have been counter-productive for Applicant to offer any product for sale before Applicant believed it would work for its intended purpose, particularly since we were aware, even then, that the cost for our invention was going to be considerably higher (by at least a factor of two) than the traditional products used for recirculation tank toilet systems. Furthermore, we were aware that AMTRAK and Metro North each had a policy that it would not consider offers for products that were not adequately tested to insure they would work for the intended purpose. This was particularly true under the present circumstance because AMTRAK personnel were dubious that the testing of the

bacteria/surfactant treatment in the recirculation tank toilet systems would prove to be a success.

26. The length and number of testing that took place were reasonable to show the bacteria/surfactant treatment would properly treat the recirculation tank toilet systems and solve the maintenance problems associated with such systems. In light of the intended use, such testing needed to be performed over a period of time and need to be shown to be repeatable.

27. The testing was performed confidentially and it was agreed that the results would not be made public until Applicant elected to do so.

28. I do not understand why the Examiner believes AMTRAK and Metro North reduced the invention to practice before the inventors of the Application. Everything that AMTRAK and Metro North were involved with regarding the invention was at the direction of Applicant. All testing of the bacteria/surfactant treatment in the recirculation tank toilet systems was under the direction and supervision of Applicant. Throughout this testing, Applicant maintained control and as alternatives arose, Applicant was solely in charge of selecting and rejecting ideas.

29 I further do not understand why the Examiner contends Applicant offered its bacteria/surfactant treatment for recirculation tank toilets for sale to AMTRAK and Metro North. Applicant did not make such an offer for sale to AMTRAK, Metro North, or any other entity before the filing date of the Application. Moreover, Applicant never had the intent to sell or offer to sell its bacteria/surfactant treatment for recirculation tank toilet systems before the filing date of the Application. Applicant certainly had no intent to sell or offer to sell its bacterial treatment for recirculation tank toilet systems before it was satisfied that this invention would work for its intended purpose.

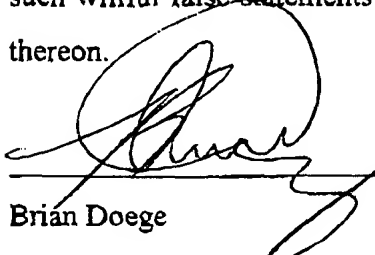
30. Further, the hypothetical conversion that Examiner surmises respecting this supposed offer for sale did not occur. The basis for Examiner's supposition appears to be based upon my statement that, at the time of AMTRAK and Metro North's testing of Applicant's MTC-2010 product, both of them informed Applicant that they were under

long-term contracts with their current suppliers for treatment of their recirculation tank toilet systems. The purpose of this statement was to explain why, despite Metro North's and AMTRAK's recognition of the effectiveness and success of the invention, it took Metro North around a year-and-a-half after Applicant filed the Application to issue an RFP for the bacteria/surfactant treatment for recirculation tank toilet systems and why AMTRAK has yet to do so even to date.

31. Moreover, as noted in my 132 Declaration, AMTRAK and Metro North issue RFP's to their vendors in which they request offers for sale. It would have been improper and inappropriate for Applicant to have offered for sale its invention to AMTRAK or Metro North unless and until they had issued a RFP requesting bids for that product. The first RFP requesting bids for treatment for its recirculation tank toilet systems that was issued by Metro North after the successful testing of the present invention was the May 2002 RFP referred to in my 132 Declaration, and which was attached at Exhibit B to that declaration. To date, AMTRAK has yet to issue such an RFP.

32. Additionally, all of the testing of the bacteria/surfactant treatment in recirculation tank toilet systems, including at AMTRAK and Metro North's facilities, took place after November 27, 1999.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

  
Brian Doege

11/20/02.  
Date



Metro-North Railroad

Date :  
To W. Duke  
From A. Roman *A Roman*  
Re **In-Service Performance Evaluation of BIO-SYS  
Microbial-Based Tank Cleaner (BMTC)**

This report presents a summary of facts and derives conclusions based on evaluation results of the subject tank cleaner.

### Executive Summary

Results of field evaluations performed by Car Appearance, Maintenance of Equipment and Quality Control Department personnel. I offer the following as a synopsis of evaluations and field observations.

1. In general, the toilets that were serviced daily rated "neutral odor" despite the absence of a fragrance additive.
2. Photographs of 8727's tank interior documented solidified waste accumulations on the walls and corners of the stainless steel tank prior to BMTC treatment. After 18 in-service runs photographs evidenced no solid matter build-up. In fact, the interior tank walls, corner and pneumatic pump assembly appeared very clean.
3. M3 Car 8053 ran 26 in-service runs with no daily service. The tank fluid was a semi-opaque light brown. Olfactory evaluations ranged from neutral to very slight odor, despite the absence of fragrance and dye additives.
4. Bombardier 038 coach consist ran 33 in-service runs with no daily servicing. On day seven after servicing the 100-gallon retention tank, car cleaners commented that there was essentially no odor from the raw sewage tank during dumping. Additionally, all effluent material was expelled in one dump (described as a slurry). Only one post-rinse cycle was necessary due to "clean" water coming out.



5. General Foreman, Foreman, Car Cleaners and Evaluators all stated that all the M2 and M3 recirculating tank toilet bowls appeared "bright and shiny".

The Quality Control Department considers the performance of the BMTC product a success, therefore, acceptable for use on recirculating and retention tank toilets based on the following:

- Remediation of objectionable odors.
- Breakdown of solidified fecal matter.
- Product performance and durability under extended servicing cycles.
- Cleaner tank interior and associated components.
- The obvious benefits of an environmentally safe cleaning solution.

#### Closing

I have arranged for the BIO-SYS Corporation to visit Metro-North, tentatively the second week of September, for the purposes of developing a "custom blend" of raw components (microbes, dye, fragrance and surfactant) suitable for use in recirculating toilets. A second product will be designed specifically for retention tank toilets.

Additionally, P. DeCarlo is exploring the possibility of using the base microbes during E-Cleaning and J. Hogan is preparing to test this product.

If you have any further questions or would like copies of the back-up documentation please don't hesitate to contact me.